

Aviation Rulemaking Advisory Committee  
FAR/JAR Harmonization Working Group  
Propeller Driven Small Airplanes  
Concept Paper

**Appendix C: Meeting Minutes**

**ICAO COMMITTEE ON AVIATION ENVIRONMENTAL PROTECTION  
TECHNICAL ISSUES SUB-GROUP (AEROPLANES)  
EIGHTH MEETING, 14 -15 MARCH 1995  
SEATTLE, USA**

**Harmonisation between the Maximum Take-off Weight of ICAO Annex 16 and  
the Airworthiness Regulations for Small Propeller Driven Aircraft of the  
American FAR 23 and the European JAR 23  
(Presented by the UK Member)**

**SUMMARY**

There is an inconsistency in the maximum take-off weight specified by the European (JAR 23) and American (FAR 23) Airworthiness Regulations for "Small Propeller Driven Aircraft" and the Noise Regulations of ICAO Annex 16.

The maximum take-off weight specified by the Airworthiness Regulations is consistent between JARs and FARs :-

- JAR 23 specifies : ".....8618 Kg (19000 lb) or less."
- FAR 23 specifies : ".....19000 lb or less." No Kilogram equivalent is listed.

ICAO Annex 16 specifies a maximum weight of 9000 Kg. No Pounds equivalent is listed but for reference, 9000Kg is equivalent to 19842 lb using the Internationally agreed conversion factor of 0.45359237 lb to 1 Kg.

No argument, or justification has been found for there to be a difference in the maximum take-off weight permitted by Noise Regulations of ICAO Annex 16 and the Airworthiness Regulations of JAR 23 and FAR 23.

In the interests of harmonisation it is therefore recommended that ICAO Annex 16 be amended to change all references to 9000 Kg to 8618 Kg; to be consistent with the maximum take of weight specified by the Airworthiness Regulations of JAR 23 and FAR 23.

**1. INTRODUCTION**

As a result of work by the FAR/JAR Harmonisation Working Group for Propeller Driven Small Aircraft, inconsistencies were identified between the maximum take-off weight specified by the European (JAR 23) and American (FAR 23) Airworthiness Regulations and the maximum take-off weight specified by the Noise Regulations applicable to this class of aircraft: FAR 36 Appendix G and JAR 36 Sub Sections B and C. JAR 36 reflects ICAO Annex 16 Chapters 6 and 10 respectively. The maximum take-off weights listed by these documents in the revision standards applicable on 1st March 1995 are:-

- ICAO Annex 16/JAR 36 : 9000 Kg. No Pounds equivalent is quoted but this equals 19842 lb at the internationally agreed conversion rate of 0.45359237 lb to 1 Kg.
- FAR 36 : 19000 lb. A Kilogram equivalent of 8640 Kg is listed, but using the above conversion this is slightly in error and should read 8618 Kg.

The Airworthiness Regulations, JAR 23 and FAR 23, are consistent with regard to maximum take-off weight, except for the preferred prime units listed:-

- JAR 23.1 lists : ".....8618Kg (19000 lb) or less."
- FAR 23.3(d) lists : ".....19000 lb or less." There is no Kilogram equivalent listed.

During committee discussion of the FAR/JAR Harmonisation Working Group for Propeller Driven Small Aircraft it was agreed that not only was it desirable to achieve harmonisation between JAR 36 and FAR 36, but that harmonisation of these two codes with the Airworthiness Regulations of JAR 23 and FAR 23 was also desirable.

## 2. DISCUSSION

Records show that the original maximum take-off weight of 12500 lb (5700 Kg), common to both the American and European Airworthiness Regulations for "Small Propeller Driven Aircraft", was increased by the FAA to 19000 lb (8618 Kg) by Amendment 23-34 to FAR 23, Effective February 17, 1987. This increase in maximum take-off weight, followed considerable debate and consultation, going back over many years, between the FAA, Industry and Interested Parties on how to cover the certification of "Commuter Type Aircraft" without having to comply with the more demanding FAR Part 25, the requirements for Large Transport Aircraft. Amendment 23-34 to FAR Part 23 introduced the Commuter Category which allowed both an increase in maximum take-off from 12500 lb to 19000 lb and an increase in the maximum number of passengers permitted from 9 to 19.

This approach by the FAA to problem of Certification of Commuter Category Aircraft was initially adopted by some individual European Airworthiness Authorities, but more importantly, it was adopted by JAA in the formulation of JAR 23.

With the exception that FAR Part 23 expresses maximum take-off weight in pounds only, with no kilogram equivalent, whereas JAR list kilograms with a (correct) pound equivalent, both Regulations list the same maximum take-off weight of 19000 lb/ 8618 Kg.

Because of the considerable history of debate and consultation between Airworthiness Authorities, Industry and other interested parties on the issue of an appropriate maximum take-off weight, which resulted in the agreement to adopt 19000 lb/8618 kg as a maximum take-off weight for Airworthiness Certification, no argument or justification can be found for a different maximum weight to be applied for Noise Certification. Therefore, the Noise Regulations should be amended to reflect the Airworthiness Limit. FAR Part 36 already reflects the Airworthiness maximum take-off weight by specifying 19000 lb. A minor clerical amendment is needed to correct the Kilogram equivalent from the present 8640 to

## 2. cont.d

8618 and to add the kg unit identifier which is not currently shown. This is a FAA domestic issue and FAA have been made aware of the error. As JAR 36 reflects ICAO Annex 16, a change to Annex 16 is needed to allow JAR 36 to be changed. ICAO Annex 16 should be amended to change all reference to 9000 kg to 8618 kg.

To ensure that no difficulties will be caused by changing ICAO Annex 16 a search has been made of aircraft bordering the maximum weight band effected i.e. 19000 lb/8618 kg to 19842 lb/9000 kg. Using as reference documents, FAA Advisory Circular AC No. 36-1F and the British General Aviation Manufacturers and Traders Association (GAMTA) General Aviation Data Base, a list has been compiled of all propeller driven aircraft with maximum take-off weights of over 16000 lb (7257 kg) but no greater than 25000 lb (11340 kg). Only 9 aircraft were found in this weight bracket. Figure 1 plots each of the 9 aircraft against a vertical weight scale. As can be seen from this figure, there is a considerable gap either side of weight band in question i.e. 19000 lb (8618 kg) to 19842 lb (9000 kg). In the lighter weight group of aircraft certificated to FAR 23, the heaviest is the CASA C212C at 17000 lb. If this or any of the other aircraft listed in the under 19000 lb group are developed to weights in excess of 19000 lb they will have to meet the Airworthiness Regulations of FAR/JAR 25 instead of FAR/JAR 23. This presents formidable problems and it was the opinion of the FAR/JAR Harmonisation Working Group for Propeller Driven Small Aircraft that this sort of development was most unlikely to take place. It is not an accident that there is a gap between the top end of the FAR/JAR 23 aircraft at 17000 lb and the bottom of the FAR/JAR 25 aircraft at 21000 lb. There are good practical considerations that result from the Airworthiness Regulations the steer manufacturers into this "jump" in weight

However, in the (extremely) unlikely event that an aircraft is increased in weight to over 19000 lb and hence into the FAR/JAR 25 Airworthiness Regulations the manufacturer will have to accept that he will have to comply with the appropriate Large Aircraft Noise Regulations. The remote chance of this arising and the penalty thus incurred, is considered a penalty worth paying in exchange for the benefits of harmonisation.

Similarly it was the opinion of the Group that it is most unlikely that a FAR/JAR 25 aircraft in the heavy group would be developed down to a lower weight. In the unlikely event of this happening the manufacturer could opt for the less onerous Noise Certification procedures for small aircraft

No conflict with the large aircraft Airworthiness Regulations of either FAR 25 or JAR 25 will result in changing ICAO Annex 16 to align it with the maximum take-off weight of both FAR23 and JAR 23.

## 3. RECOMMENDATION

In the interests of harmonisation it is recommended that ICAO Annex 16 be amended to change all references to 9000 Kg to 8618 Kg; to be consistent with the maximum take of weight specified by the Airworthiness Regulations of JAR 23 and FAR 23.

Subject: Meeting Minutes

Date: 20 October 1994

To: ARAC Propeller HWG Membership

From: R. Howes  
R. Wilson

Attachments: 1. Agenda.  
2. Attendee List.  
3. Summary of Action Items.  
4. Document List.  
5. Revised Document 2, Document 2A.

Agenda is attached. Meeting followed agenda closely. Session began with introductions as indicated.

Reviewed agenda and no changes or additions were needed.

Began discussion on terms of reference (TOR). Discussion centered on what our working group would produce. It was decided that we would probably produce two documents, one for US agencies (NPRM) and one for European Agencies (NPA). It was further decided that more than one document could be submitted to each agency if timing, priorities and issues involved would benefit.

It was pointed out that harmonization really involved two areas. First, amendments to each of the bodies of regulation could be proposed (NPRM/NPA). Second, advisory material could be reviewed for harmonization. Mr Kearsey pointed out that JAR is tied closely with ICAO, Annex 16. This body of regulation involves the consensus of many nations. Therefore changes for harmonization instigated through the NPA process that would require changes to Annex 16 could take a long time. However, harmonization that could be effected through advisory material could be expedited. This was duly noted.

Messrs Kearsey and Depitre suggested that we might modify our current terms of reference (statement of purpose and execution) to include how we intend to execute our charter. We agreed to do this. Modified TOR is attached.

Established a document tracking system to keep track of supporting documents that are handed out. Document list is attached.

The first document entered was the agenda. The next two documents were lists of differences between FAR 36, Appendix G and ICAO Annex 16, Chapter 10. Document 2 was a list generated in the JAR 36 working group and presented at the third meeting in Paris, 2 December 1993. Document 3 was a list prepared by Mr Marsan and presented for the first time at this meeting.

Review of documents 2 and 3 was undertaken item by item and actions assigned. It was decided that the items in Document 2 covered everything in Document 3. Mr Latoni pointed out that neither document addressed the power variation differences allowed for aircraft with fixed pitch propellers. This item was added and revised Document 2A is attached.

Consensus was that a harmonization position could be generated on most items. Some items will need to be simply researched and coordinated. It was decided that Technical Position Papers (TPP) would be prepared where necessary. These are apparent in list of attached action items.

Following is a list of the items from Document 2A showing actions and relevant comments.

Doc 2A Item	Comments	Action Item
1. Applicability	No harmonization recommended	
2. Weight Limit	Discussion centered around coordination of the general cert requirements of FAR 23 and JAR 23. It was agreed that the maximum weight for noise cert should reflect those in these two codes.	4
3. Mic Height	Tabled for further consideration.	
4,5 & 7. Calibration and Tape Requirements	Combined and assigned to Ron Hund	9
6. Met Data	It was agreed that the flexibility allowed in FAR 36 was desirable.	8
8. Absorption correction window	Discussion revealed that this was possibly due to rounding error in unit conversion.	3
9. Absorption correction	This item needed some research. A TPP with a recommended position will be prepared and presented at the next meeting.	2
10. Power Adjustments	This item needed some research. A TPP with a recommended position will be prepared.	6
11. Ref Noise Level	No action required.	
12. Noise Limits	Tabled for further consideration.	
13. Power Deviations allowed	This item needed some research. A TPP with a recommended position will be prepared.	7

Began work on advisory material. It was determined that both codes were supported by a body of advisory material. JAA material was mostly appended to the body of regulation as notes in selected sections and in Section 2, Advisory Material, Joint (AMJ). Very little of the material in Section 2, JAR 36 applied to light propeller driven aircraft. FAA material is being consolidated in a noise reference manual currently under preparation.

Discussions indicated a need for attention to techniques for correcting helical tip Mach No. It was decided that this would be coordinated with the preparation of subject manual. It was further decided that parts of this manual could be effectively used in support of JAR. Mr Mellers of Slingsby agreed to go through the JAR and summarize the advisory notes contained for comparison to the FAA noise manual and presented as a TPP at the next meeting.

In closing it was agreed that harmonization could be recommended and documents submitted soon for most items. Therefore it was decided to meet again in February rather than December to give adequate time for research and preparation of TPP's with the intent that harmonization documents could be submitted as early as May 1995.

Next meeting is planned for 21-22 February 1995. It will be hosted by CAA and held in Gatwick, West Sussex, United Kingdom.

Robert L Howes  
US Co-Chair

R Wilson  
European Co-Chair

### **Attachment 3: Summary of Action Items**

1. Draft a proposed schedule.  
Bob Wilson
2. Document 1, Item 9. Prepare a Technical Position Paper (TPP) on the differences in absorption correction factors and reference temperatures and recommend a harmonization position.  
Rob Howes
3. Document 1, Item 8. Review absorption correction windows and recommend a harmonization position.  
Mehmet Marsan
4. Document 1, Item 2. Prepare a TPP on the differences in gross weight cutoff values and recommend a harmonization position.  
Bob Wilson
5. Interpretive Item. Prepare a TPP on how the test time allowed before gross weight adjustments become necessary is defined in both bodies of regulation.  
Ron Hund
6. Document 1, Item 10. Prepare a TPP on power correction procedures and recommend a harmonization position.  
John Bertolacci
7. Document 1, Item 13. Prepare a TPP on the 5% power window allowed for fixed pitch propeller aircraft and recommend a harmonization position.  
Carlos Latoni
8. Document 1, Item 6. Recommend a NPA to JAR that will harmonize measurement height. Handle location in interpretative material.  
Bob Wilson
9. Document 1, Items 4,5 and 7. Summarize the differences between analog tape quality requirements and calibration procedures and report to committee.  
Ron Hund
10. Interpretative Item. Prepare a TPP on helical tip Mach Number correction issues and allowed margins. Co-ordinate this effort with Mehmet Marsan's efforts. Recommend a harmonization position.  
Rob Howes & Carlos Latoni



**Attachment 4: Document List**

**Document 1**

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Meeting Agenda

**Document 2**

Comparison of ICAO Annex 16 Chapter 10 and FAR Part 36 Appendix G for  
propeller driven light aeroplanes.

**Document 3**

Mehmet Marsan regulation comparison labeled "comp.xls".

**Document 4**

Handbook for Aviation Rulemaking Advisory Committee (ARAC) and  
Working Group Members.

**Document 5**

Internal Operating Procedures for Support of the Aviation Rulemaking  
Advisory Committee (ARAC).

**Document 6**

Document entitled, "Group of experts on the Abatement of Nuisances caused  
by Civil Air Transport".

Attachment 5

Document 2A  
Comparison of ICAO Annex 16 Chapter 10 and FAR Part 36 Appendix G for Propeller Driven Light Aeroplanes

Item	Chapter 10/Appendix 6	Appendix G
1. Applicability	C of A application after 19th November 1988 (10.1.1). Failures can be tested to Chapter 6 until 17 November 1993(10.1.2).	Aeroplanes tested after 22nd December 1988 (Appendix G table). no provision.
2. Weight limit	up to 9,000 Kg maximum take-off weight (10.1.1).	8,640 Kg max take-off weight. (G36.301(b)).
3. Microphone height	7 mm above a ground plate (Appendix 6, 4.4.1).	4ft above ground level (G36.107(a))
4. Pseudo-random pink noise cal for recordings.	relative output of each 1/3 octave band not more than 0.2 dB (Appendix 6, 4.4.2).	not defined
5. Tape quality	Variation in 10 KHz band of 30 secs of calibration signal at beginning and end of type not greater than 0.75 dB (Appendix 6, 4.4.3).	not defined
6. Meteorological data	collected at 1.2m (Appendix 6, 2.2.2(b),(c))	collected between 1.2m and 10m (G36.101(b)(6))
7. Pre-de-emphasis recording	not defined	G36.105(d)
8. No absorption correction window	figure 6-2	lower temperature is 35.6 deg F (2.5 deg C compared with 2 deg C in Annex 16) (Fig G1)
9. Adjustments, absorption outside test window.	$d(M) = 0.01 (H^{\alpha} \alpha - 0.2^{\alpha} H^{\alpha})$ Appendix 6, 5.2.2 (a)	not specified, G36.201(a)(4)(b) or $d(M) = (\alpha - 0.7)^{\alpha} H/1000$
10. Power adjustments	$d3 = K^3 \log(P_r/P_t)$ Appendix 6, 5.2.2(d)	$d3 = 17 \log(P_r/P_t)$ G36.201(d)(4)
11. Reference noise level	$(L_{\max})_{\text{Ref}} = (L_{\max})_{\text{test}} + d(M) + d1 + d2 + d3$	
12. Noise limits	76 dB(A) up to 600 Kg and increasing at 9.83 dB(A) per doubling of noise until the limit of 88 dB(A) is reached and is constant up to 9000 Kg.	
13. Power variance	no equivalent	G36.201(c)(2) allows for 5% power variation for aircraft with fixed pitch propellers.

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Gatwick, UK

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Subject: Meeting Minutes

Date: 22 February 1995

To: ARAC Propeller HWG Membership

From: R Howes  
R Wilson

Attachments:   1. Attendee List.  
                  2. Summary of Action Items.  
                  3. Document List.  
                  4. Recommended format for Technical Position Papers (TPP's).  
                  5. TPP list.  
                  6. Errata.  
                  7. Schedule.

Meetings followed agenda. No agenda changes were proposed. List of attendees is attached. Willem Franken of the Netherlands Rijksluchtvaartdienst sent his regrets as he had planned to attend.

Action items 1 through 13 were completed. Drafts of TPP's were presented and discussed.

The working group has reviewed and updated the required harmonization items, prepared draft TPP's, reviewed and discussed these TPP's and recommended a harmonization position. TPP's will be finalized, put in a standard format and submitted at the conclusion of our work as supporting material. NPRM's will be drafted for changes recommended to FAR 35. JAR 36 changes will be proposed by papers submitted to CAEP/ATISG.

Draft TPP for document 2A, item 9 (absorption correction factors and reference temperatures) was discussed. JAR position was recommended. Reference LPDA-TPP-001.

Draft TPP for document 2A, item 8 (absorption correction windows) was discussed. JAR position was recommended. Reference LPDA-TPP-002.

Draft TPP for document 2A, item 2 (gross weight categories) was discussed. FAA position was recommended. Reference LPDA-TPP-003. Regulations for heavy aircraft are

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affected since they quote a lower limit. It was decided that LPDA-TPP-003 will be presented this March in Seattle at the next meeting of the CAEP/ATISG.

This will be done so that this recommendation can be entered into the ICAO process as soon as possible since a JAR change has been recommended. See action items 14, 15 and 16.

The two bodies of regulation were reviewed for their treatment of gross weight adjustments during testing. They were determined to be in harmony.

Draft TPP for document 1, item 10 (power correction procedure) was presented and discussed. JAR position has been recommended. Reference LPDA-TPP-004.

Draft TPP's for document 1, item 13 (5% power window allowed in FAR 36) and the interpretive issue on helical tip mach number corrections was presented and discussed. This issue is currently under review by ICAO/CAEP working groups and others. It was decided to draft a letter summarizing the concerns of this working group and submit it CAEP/ATISG and others. The major concern is that test procedures for determining a reasonable correction factor will be imposed that will not be practical or even possible in the case of small propeller driven aircraft with fixed pitch propellers.

Document 1, item 6 (measurement height for meteorological conditions) was discussed. FAA position has been recommended. Reference LPDA-TPP-005.

Draft TPP for document 1, items 4,5 and 7 (analog tape calibration and quality) was presented and discussed. It was pointed out that new standards are under consideration for digital recording techniques. It was decided to table this issue and Co-ordinate with the heavy aircraft working group. Reference action item 20.

The FAA position on temperature inversions was clarified. No temperature inversion is allowed during testing. The JAA position was also clarified. Decision to test in the presence of temperature inversion is left to the JAA representative at the test site. These positions are not in harmony. The JAA position is preferred. Reference action item 23.

A review of JAR interpretive notes was presented and experience with US noise documents was presented and discussed. Both of these discussions focused on how various bodies of regulation are interpreted. It was pointed out that there is a need to

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harmonize interpretive material. Action items 26, 27 and 28 will be presented at the next meeting.

The next meeting is scheduled for 6-7 July 1995 in Washington DC at the FAA offices in the Department of Energy. Reservation information along with meeting agenda information will follow.

Robert L. Howes, US Co-Chair

Robert Wilson, European Co-Chair

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Attachment 1: List of Attendees

Rob Howes	Cessna Aircraft
Dieter Pade	AOPA, Germany
Frank Weiblen	MT-Propeller
Alain Depitre	JAA/DGAC France
Peter Kearsey	JAA/CAA UK
Mehmet Marsan	FAA USA
Rick Bowerman	Hartzell Propeller
Bob Wilson	Pilatus Britten Norman
Barry Mellers	Slingsby Aviation
Graham Forbes	GAMTA
Guy Readman	JAA/CAA UK

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**Attachment 2: Summary of Action Items**

**Action Items generated at Ottawa Meeting, 15-16 Sep 1994:**

1. Draft a proposed schedule.  
Bob Wilson.  
Complete.
2. Document 2A, Item 9. Prepare a Technical Position Paper (TPP) on the differences in absorption correction factors and reference temperatures and recommend a harmonization position.  
Rob Howes.  
Complete. JAR regulation proposed for harmonization. TPP will be finalized for submittal as supporting information.
3. Document 2A, Item 8. Review absorption correction windows and recommend a harmonization position.  
Mehmet Marsan.  
Complete. JAR window proposed for harmonization. TPP will be finalized for submittal as supporting information.
4. Document 2A, Item 2. Prepare a TPP on the differences in gross weight cutoff values and recommend a harmonization position.  
Bob Wilson.  
Complete. FAA cutoff values proposed for harmonization. TPP being finalized for presentation at next ATISG meeting and submittal as supporting information.
5. Interpretive Item. Prepare a TPP on how the test time allowed before gross weight adjustments become necessary is defined in both bodies of regulation.  
Ron Hund  
Complete. Regulations determined to be in harmony. No further action.
6. Document 2A, Item 10. Prepare a TPP on power correction procedures and recommend a harmonization position.  
John Bertolacci  
Complete. JAR regulation proposed for harmonization. TPP will be finalized and submitted as supporting information.

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Attachment 2: Summary of Action Items (continued)

7. Document 2A, Item 13. Prepare a TPP on the 5% power window allowed for fixed pitch propeller aircraft and recommend a harmonization position.

Carlos Latoni

Complete. This procedure is being revamped by ICAO through its CAEP process. It was decided to submit a letter to the CAEP process documenting the concerns that have been raised in this working group.

8. Document 2A, Item 6. Recommend a NPA to JAR that will harmonize measurement height. Handle location in interpretative material.

Bob Wilson.

Complete. Decision has been made to finalize a TPP and recommend the FAA position be adopted. This item not appropriate for interpretive material. See action item 19 below.

9. Document 2A, Items 4,5 and 7. Summarize the differences between analog tape quality requirements and calibration procedures and report to committee.

Ron Hund.

Complete. Item tabled until some coordination with heavy aircraft group can occur. See action item 20 below.

10. Interpretative Item. Prepare a TPP on helical tip mach number correction issues and allowed margins. Co-ordinate this effort with Mehmet Marsans efforts. Recommend a harmonization position.

Rob Howes

Carlos Latoni

Complete. This has been combined with action item 7 and will be covered as described there.

11. Interpretative Item. Clarify FAA position on temperature inversion conditions.

Mehmet Marsan.

Complete. FAA position was not in harmony with JAR. See action item 23 below.



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12. Interpretative Item. Review JAR notes and summarize their content for review and comparison to FAA reference document on noise measurement.  
Barry Mellers.  
Complete.

**Attachment 2: Summary of Action Items (continued)**

13. Interpretative Item. Summarize experience in review US noise documents and document apparent differences in interpretative materials.  
Alain Depitre.  
Complete. See action items 26 and 27 below.

**Action Items generated from Gatwick Meeting, 21-22 Feb 1995:**

14. Supply gross weight information for industry aircraft to Bob Wilson.  
Mehmet Marsan.
15. Formalize TPP on certification weight limits so that it can be submitted to ATISG in Seattle March. Bob Wilson
16. Co-ordinate the attendance of a HWG member at the ATISG working group meeting in Seattle in Mar 95 to present our weight category harmonization recommendations. Rob Howes.
17. Co-ordinate our weight category harmonization position with the heavy aircraft working group, Ken Orth. Rob Howes.
18. Draft a letter to the ATISG outlining some of the concerns about handling aircraft with fixed pitch propellers when determining helical tip Mach Number correction factors. Rob Howes.
19. Prepare a TPP on measurement height requirements for determining meteorological conditions and have it ready for submittal to the ATISG in March 95. Bob Wilson.
20. Co-ordinate with heavy aircraft working group re tape calibration and quality issues and report back. Rob Howes.

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Attachment 2: Summary of Action Items (continued)

21. Rework TPP on absorption correction procedures and prepare document for submittal as supporting information for the HWG final recommendation. Rob Howes.
22. Prepare a TPP on measurement microphone configuration and recommend a harmonization position. Rob Howes and Bob Wilson.
23. Petition the FAA to adopt the JAA wording regarding "anomalous" meteorological conditions. Mehmet Marsan.
25. Prepare a TPP on sound level meter measurement settings (fast vs slow) and recommend a harmonization position. Barry Mellers.
26. Co-ordinate the efforts of selected committee members to assemble descriptions of their measurement setups and test data acquisition practices and submit these to Bob Wilson and Barry Mellers for consideration in work under item 27 below. Rick Bowerman.
27. Prepare a TPP outlining interpretive material for ICAO Annex 16 and JAR 36, light propeller driven aircraft. This paper will consider data already compiled in draft form and under consideration by the FAA so that interpretative material will be harmonized. Draft will be reviewed for concurrence by JAA and FAA representatives. Bob Wilson and Barry Mellers.

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Attachment 4: Recommended Format for Technical Position Papers.

Use the heading shown above without the date and location and include the following:

TPP No.

Title of working paper

Author

Date

Applicable FAR:

Applicable JAR:

1.0 Recommendation

2.0 Background and Relevant Data

3.0 Discussion

TPP No: Page ij of kk

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Attachment 5: List of Technical Position Papers

LPDA-TPP-001	Absorption Correction Factors and Reference Temperatures.
LPDA-TPP-002	Temperature/Humidity Test Windows.
LPDA-TPP-003	Gross Weight Categories.
LPDA-TPP-004	Power Correction Procedures.
LPDA-TPP-005	Measurement Heights for Determining Meteorological Conditions.
LPDA-TPP-006	Measurement Microphone Location and Orientation.

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**Attachment 6: Errata**

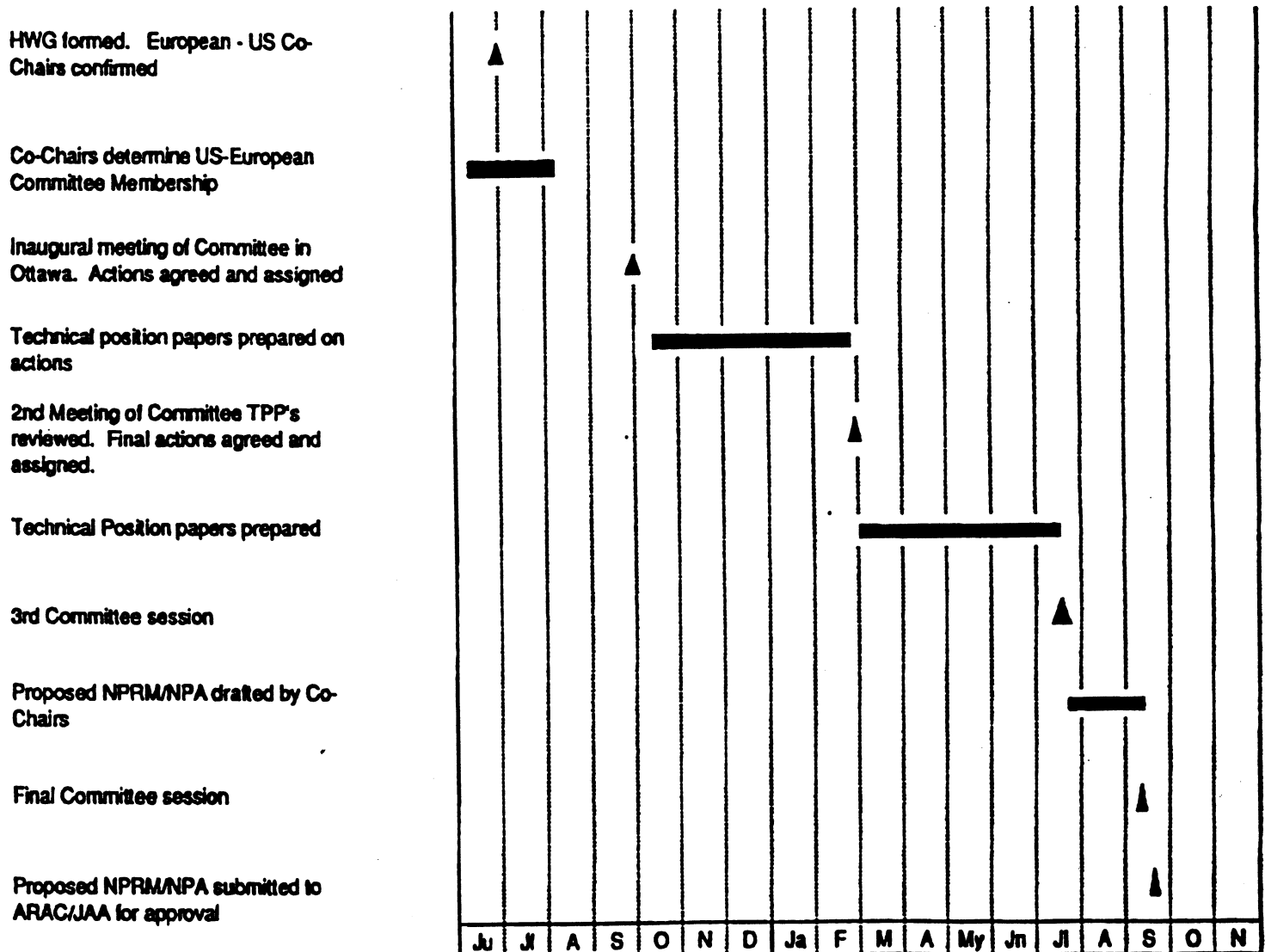
1. Meeting minutes data 20 October 1994, Summary of action items, items 2 through 9 referred to Document 1. These items should have referred to document 2A.

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Attachment 7: Schedule

**FAR/JAR HARMONIZATION WORKING GROUP  
PROPELLER-DRIVEN SMALL AIRPLANES - TIMETABLE**



Aviation Rulemaking Advisory Committee  
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6-7 July 1995  
Wichita, Kansas

Subject: Meeting Minutes

Date: 7 July 1995

To: ARAC Propeller HWG Membership

From: R. Howes

R. Wilson

Attachments: 1. Attendee List.  
2. Summary of Action Items.  
3. Recommended format for Technical Position Papers (TPP's).  
4. TPP list.  
5. Document List.  
6. Schedule.

Third meeting of Propeller Driven Small Aircraft HWG was held in Wichita, KS 6-7 July 1995. List of attendees is attached. Apologies for absence are acknowledged from Barry Mellers, Dieter Pade, Graham Forbes, Frank Weiblen and Willem Franken.

A review of action items was conducted. New list was compiled and is attached.

Mehmet Marsan submitted a new schedule showing activities required to submit our recommendations to the FAA. Schedule is attached.

Requirements for drafting regulation changes were discussed. It was decided that the Co-Chairs will be briefed by the FAA legal staff in Washington. Briefing is tentatively scheduled for Tuesday, 11 July 1995.

LPDA-TPP-003, Gross Weight Categories, was submitted to ATISG and then to Working Group 1. It was agreed that this paper will be discussed at CAEP 3 in Montreal in December 1995.

Much discussion was devoted to the subject of making measurements for the purpose of calculating a correction factor for helical tip mach number. Action Item 27 was the result of this discussion.

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Committee has decided to generate a final report. This document will contain all of the Technical Position Papers on the attached list. These papers will recommend harmonization positions where required and will present the technical justification. TPPs will be submitted in the attached format.

Interpretative material and selected certification experience will be compiled in an appendix to the committee's final report. This appendix will be submitted separately to the ATISG working group under an industry letter for consideration in their technical manuals. Appendix will also be submitted to FAA for consideration of Appendix G Handbook.

Agreement was reached to adopt the ICAO microphone position and to adjust levels to compensate for the physics of the new location. However, it was decided that a final review of industry data should be conducted to insure that there is no impact from the recommended harmonization.

Robert L. Howes  
US Co-Chair

Robert Wilson  
European Co-Chair



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Attachment 1: List of Attendees

Rob Howes	Cessna Aircraft
Alain Depitre	JAA/DGAC France
Peter Kearsey	JAA/CAA UK
Mehmet Marsan	FAA USA
Rick Bowerman	Hartzell Propeller
Bob Wilson	Pilatus Britten Norman
Carlos Latoni	Piper Aircraft
John Bertolacci	Fairchild Aircraft Inc
Ron Hund	Ratheon Aircraft Corp

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Attachment 2: Summary of Action Items

**Action Items generated at Ottawa Meeting, 15-16 Sep 1994:**

1. Draft a proposed schedule.  
Bob Wilson.  
Complete.
2. Document 2A, Item 9. Prepare a Technical Position Paper (TPP) on the differences in absorption correction factors and reference temperatures and recommend a harmonization position.  
Rob Howes.  
Complete. JAR regulation proposed for harmonization. TPP will be finalized for submittal as supporting information.
3. Document 2A, Item 8. Review absorption correction windows and recommend a harmonization position.  
Mehmet Marsan.  
Complete. JAR window proposed for harmonization. TPP will be finalized for submittal as supporting information.
4. Document 2A, Item 2. Prepare a TPP on the differences in gross weight cutoff values and recommend a harmonization position.  
Bob Wilson.  
Complete. FAA cutoff values proposed for harmonization. TPP being finalized for presentation at next ATISG meeting and submittal as supporting information.
5. Interpretive Item. Prepare a TPP on how the test time allowed before gross weight adjustments become necessary is defined in both bodies of regulation.  
Ron Hund  
Complete. Regulations determined to be in harmony. No further action.

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Attachment 2: Summary of Action Items (continued)

6. Document 2A, Item 10. Prepare a TPP on power correction procedures and recommend a harmonization position.

John Bertolacci

Complete. JAR regulation proposed for harmonization. TPP will be finalized and submitted as supporting information.

7. Document 2A, Item 13. Prepare a TPP on the 5% power window allowed for fixed pitch propeller aircraft and recommend a harmonization position.

Carlos Latoni

Complete. This procedure is being revamped by ICAO through its CAEP process. It was decided to submit a letter to the CAEP process documenting the concerns that have been raised in this working group.

8. Document 2A, Item 6. Recommend a NPA to JAR that will harmonize measurement height. Handle location in interpretative material.

Bob Wilson.

Complete. Decision has been made to finalize a TPP and recommend the FAA position be adopted. This item not appropriate for interpretive material. See action item 19 below.

9. Document 2A, Items 4,5 and 7. Summarize the differences between analog tape quality requirements and calibration procedures and report to committee.

Ron Hund.

Complete. Item tabled until some coordination with heavy aircraft group can occur. See action item 20 below.

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**Attachment 2: Summary of Action Items (continued)**

10. Interpretative Item. Prepare a TPP on helical tip mach number correction issues and allowed margins. Co-ordinate this effort with Mehmet Marsan's efforts. Recommend a harmonization position.  
Rob Howes  
Carlos Latoni  
Complete. This has been combined with action item 7 and will be covered as described there.
11. Interpretative Item. Clarify FAA position on temperature inversion conditions.  
Mehmet Marsan.  
Complete. FAA position was not in harmony with JAR. See action item 23 below.
12. Interpretative Item. Review JAR notes and summarize their content for review and comparison to FAA reference document on noise measurement.  
Barry Mellers.  
Complete.
13. Interpretative Item. Summarize experience in review US noise documents and document apparent differences in interpretative materials.  
Alain Depitre.  
Complete. See action items 26 and 27 below.

**Action Items generated from Gatwick Meeting, 21-22 Feb 1995:**

14. Supply gross weight information for industry aircraft to Bob Wilson. Mehmet Marsan. Complete
15. Formalize TPP on certification weight limits so that it can be submitted to ATISG in Seattle March. Bob Wilson. Complete
16. Co-ordinate the attendance of a HWG member at the ATISG working group meeting in Seattle in Mar 95 to present our weight category harmonization recommendations. Rob Howes. Complete

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Attachment 2: Summary of Action Items (continued)

17. Co-ordinate our weight category harmonization position with the heavy aircraft working group, Ken Orth. Rob Howes. Complete
18. Draft a letter to the ATISG outlining some of the concerns about handling aircraft with fixed pitch propellers when determining helical tip mach number correction factors. Rob Howes. Superseded by AI 27.
19. Prepare a TPP on measurement height requirements for determining meteorological conditions and have it ready for submittal to the ATISG in March 95. Bob Wilson. Complete
20. Co-ordinate with heavy aircraft working group re tape calibration and quality issues and report back. Rob Howes. Complete
21. Rework TPP on absorption correction procedures and prepare document for submittal as supporting information for the HWG final recommendation. Rob Howes. Complete
22. Prepare a TPP on measurement microphone configuration and recommend a harmonization position. Rob Howes and Bob Wilson. Superseded by AI 37.
23. Petition the FAA to adopt the JAA wording regarding "anomalous" meteorological conditions. Mehmet Marsan. Complete.
24. Prepare a TPP on sound level meter measurement settings (fast vs slow) and recommend a harmonization position. Superseded by AI 35. Barry Mellers.
25. Co-ordinate the efforts of selected committee members to assemble descriptions of their measurement setups and test data acquisition practices and submit these to Bob Wilson and Barry Mellers for consideration in work under item 27 below. Rick Bowerman. Superseded by AI 41.

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Attachment 2: Summary of Action Items (continued)

26. Prepare a TPP outlining interpretive material for ICAO Annex 16 and JAR 36, light propeller driven aircraft. This paper will consider data already compiled in draft form and under consideration by the FAA so that interpretative material will be harmonized. Draft will be reviewed for concurrence by JAA and FAA representatives. Bob Wilson and Barry Mellers. Superseded by AI 41.

**Action Items generated from Wichita meeting, 6-7 July 1995:**

27. Measure and prepare an experimental data set showing the variation of helical tip Mach Number vs dB(A). Co-ordinate with selected industry experts and attempt to define an analytical version of the measured data. Have data ready for presentation at the Frankfurt meeting in Sept 95. Supersedes AI No. 18 above. Rob Howes.
28. Prepare LPDA-TTP-010 on the tolerance allowed by JAA in helical tip mach no. Make a harmonization recommendation. John Bertolacci.
29. Prepare a cover letter for LPDA-TTP-005 and submit it to Mike Smith of Rolls Royce as an industry position letter for consideration at the upcoming meeting of CAEP 3. Bob Wilson.
30. Prepare LPDA-TTP-007, Tape Calibration Requirements. Ron Hund.
31. Modify LDPA-TTP-001, Absorption Correction Factors and Reference Temperatures, and clarify units. Prepare TPP for submittal. Rob Howes.
32. Prepare a section for the committee's interpretive document outlining an interpretation of the requirements regarding temperature inversions from JAA. Bob Wilson.
33. Check with FAA in Washington to see if it makes any sense to exclude aerobatic aircraft from Appendix G requirements and possibly pick them up somewhere else. Mehmet Marsan.

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Attachment 2: Summary of Action Items (continued)

34. Prepare a section for the committee's interpretive document outlining how altitude measurement and flight path verification are done using a camera. Rob Howes.
35. Prepare LPDA-TPP-011, SLM settings, to outline new wording for the JAR's that will specifically call out the SLM settings. Ron Hund.
36. Prepare LPDA-TPP-009, Power Definitions, so that power settings that are admissible are clearly defined in both sets of regulations. Carlos Latoni.
37. Prepare LPDA-TPP-006, Measurement Microphone Location and Orientation. Compile some industry data as part of the work. This supercedes AI No 22 above. Rob Howes and Bob Wilson.
38. Make parts of the European database on Chapter 10 test results available to the committee. Database will be on 3 1/2" floppy in Microsoft EXCEL format. Rob Howes and Bob Wilson will co-ordinate committee distribution. Alain Depitre.
39. Add some clarification to the Appendix G Handbook, 14 CFR Part 36, to spell out where reference conditions are measured, eg on the ground or at altitude. Make the revised wording available to Bob Wilson. Make an electronic copy of handbook available. Mehmet Marsan.
40. Contact GAMA and discuss whether any involvement in the International Coordinating Council of Aerospace Industries Association (ICCAIA) to promote the interests of general aviation would be appropriate. Rob Howes and Bob Wilson.
41. Co-ordinate committee inputs and compile an appendix for advisory material and submit to ATISG as background information and publication as ICAO advisory material. Supercedes AI No 26 above. Alain Depitre and Rick Bowerman.
42. Conduct a final review and compare JAR 36 and FAR 36 to insure that all harmonization issues have been addressed. Rob Howes and Bob Wilson.

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Attachment 2: Summary of Action Items (continued)

43. Submit a report to the JAR 36 Study Group on committee progress. Bob Wilson.
44. All TPP's to be put in final committee format and submitted to committee chairs by 11 August 1995. All



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Attachment 3: Recommended format for Technical Position Papers.

Use the heading shown above without the date and location and include the following:

TPP No.

Title of working paper

Author

Date

Applicable FAR:

Applicable JAR:

- 1.0 Recommendation
- 2.0 Background and Relevant Data
- 3.0 Discussion

TPP No: Page ij of kk

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Attachment 4: List of Technical Position Papers

LPDA-TPP-001	Absorption Correction Factors and Reference Temperatures.
LPDA-TPP-002	Temperature/Humidity Test Windows.
LPDA-TPP-003	Gross Weight Categories.
LPDA-TPP-004	Power Correction Procedures.
LPDA-TPP-005	Measurement Heights for Determining Meteorological Conditions.
LPDA-TPP-006	Measurement Microphone Location and Orientation.
LPDA-TPP-007	Tape Calibration
LPDA-TPP-008	Power Deviations
LPDA-TPP-009	Power Definitions
LPDA-TPP-010	Helical Tip Mach No. Tolerances
LPDA-TPP-011	SLM Setup
LPDA-TPP-012	Items not Harmonized

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Attachment 5: Document List

Document 1  
Meeting Agenda

Document 2A  
Comparison of ICAO Annex 16 Chapter 10 and FAR Part 36 Appendix G for  
propeller driven light aeroplane.

Document 3  
Mehmet Marsan regulation comparison labeled "comp.xls".

Document 4  
Handbook for Aviation Rulemaking Advisory Committee (ARAC) and Working Group  
Members.

Document 5  
Internal Operating Procedures for Support of the Aviation Rulemaking Advisory  
Committee (ARAC).

Document 6  
Document entitled, "Group of experts on the Abatement of Nuisances caused by  
Civil Air Transport".

Document 7  
List of technical position papers.

## FAR/JAR Harmonization (Noise) under ARA

Row #	Task Name	Start	End	1994			1995				1996		
				Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
1	ARAC Establishes WG	Apr/16/94	Apr/16/94	△									
2	Fed Reg Notice	May/04/94	May/10/94	I									
3	1st Meeting (Ottawa)	Oct/20/94	Oct/21/94			I							
4	Prepare Tech Positions	Nov/08/94	Feb/21/95			■							
5	2d Meeting (Gatwick)	Feb/21/95	Feb/27/95				I						
6	Update Position Papers	Feb/28/95	Jun/23/95				■	■					
7	Comapre App G handbook	Feb/28/95	Jun/21/95				■	■					
8	3d Meeting (Wichita)	Jul/06/95	Jul/07/95						I				
9	ARAC Orientation by APM	Jul/10/95	Jul/10/95						I				
10	Prepare Concept Paper	Jul/17/95	Aug/25/95						■				
11	Submit Concept Paper to ARAC	Aug/25/95	Aug/25/95						△				
12	Submit Concept Paper to GAMA	Aug/28/95	Aug/28/95						△				
13	Draft NPRM	Aug/28/95	Jan/05/96						■	■			
14	Drafting Support by APM	Oct/02/95	Nov/13/95							■			
15	4th Meeting (Frankfurt)	Sep/26/95	Sep/27/95						I				
16	AGC Guidance by AGC	Sep/25/95	Sep/27/95						I				
17	APO Guidance by AEE	Sep/25/95	Sep/27/95						I				
18	Reg Eval by APO	Nov/13/95	Mar/22/96							■	■		
19	Legal Review by AGC	Mar/18/96	Apr/26/96								■		
20	5th Meeting	May/01/96	May/02/96								I		
21	Prepare Final NPRM	May/02/96	Jun/13/96								■		
22	Submit to ARAC	Jun/13/96	Jun/13/96									△	
23	Submit to JAR Study Group	Jun/13/96	Jun/13/96									△	
24	Submit to GAMA	Jun/13/96	Jun/13/96									△	

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Milestone



Summary



Fixed Delay



**FAR/JAR Harmonization Working Group  
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**14 - 15 November 1995  
Frankfurt, Germany**

**Subject:** Meeting Minutes

**From:** R Wilson (European Co-Chair)

**Circulation:** All LPDA HWG Members

**Meeting Host & Location:** AOPA-Germany, Egelsbach, nr Frankfurt, Germany

**Attachments:**

1. Attendee List
2. Agenda
3. Draft 3 of Concept Paper
4. Action List

**Agenda Item 1 - Apologies for Absence & General**

The fourth meeting of the LPDA HWG was held at the AOPA-Germany Offices on the outskirts of Frankfurt, on 14th and 15th November 1995. The list of attendees is attached. Apologies for absence were received from: Graham Forbes, Rob Howes, Mehmet Marsan, Carlos Latoni, John Bertholacci and Ron Hund. As the FAA representative was unable to attend, this fourth meeting of the Working Group did not count as an ARAC recognised meeting.

Rick Bowerman deputised for Rob Howes as the US Co-Chair.

The draft agenda circulated before the meeting was agreed with one addition: to review the actions of the Wichita meeting. This was added as Agenda Item 5A.

**Agenda Item 2 - Review & Approve Minutes of Wichita Meeting**

The minutes of the Wichita meeting were accepted as an accurate record of the meeting. Several typographical errors were identified. The Chairman noted these and corrections will be made in the redraft of the Concept Paper.

**Agenda Item 3 - Confirm the Position of Industry Committee Members**

At the time of the meeting, it had been confirmed that two of the three European Industry Committee members: Bob Wilson for Pilatus Britten-Norman and Barry Mellers for Slingsby Aviation Ltd had authority to speak for their Companies. Copies of the letters of authorisation will be sent to the US Co-Chair. A summary of the authority of each industry committee member may be included in a future issue of the Concept Paper.

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**Agenda Item 3 - cont.d**

The situation with regard to the two General Aviation representing organisations, GAMTA and AOPA is to be confirmed following consultation with a representation of their membership and management.

**Note:** Clarification of whether the Working Group's Industry Members had authority to speak for their respective companies, or whether they only spoke as individuals, was asked for by David Hilton, ARAC Joint Chair, when Rob Howes and Bob Wilson presented the Concept Paper, 1st Draft, to him and Bill Schultz of GAMA in October 1995.

Obviously, if the Committee's Industry representatives have the authority to speak for their Companies it increases the authority of the Committee.

**Agenda Item 4 - Review & Agree Concept Paper**

All attendees had been circulated Draft 1 of the Concept Paper, dated October 1995, prior to the meeting.

A preliminary copy of the 2nd Draft was circulated at the meeting. This replaces Section 1 through 4 and Appendix A. The other Appendices are not effected. A copy of the revised pages is shown as Attachment 3.

The revised Concept Paper was reviewed page by page. With the exception of minor changes to wording to add clarification (Paras 2.2 and 4.3 only) and correction of typographical errors, this revised Concept Paper was agreed unanimously except for changes arising from the review of the Technical Position Papers. Also it was recommended that a Glossary of abbreviations be added as Appendix F and that a list of the references in ICAO Annex 16 equating to those JAR 36 requirements identified for harmonization be added.

Bob Wilson volunteered to take on these two actions.

**Action: Bob Wilson**

The review of the TPP's listed in Appendix B of the Concept Paper, is minuted below. Appendices C, D and E were reviewed page by page. There were no substantive changes arising, only typographical errors. Bob Wilson marked up a "Master Copy" with all errors identified.

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**Agenda Item 5 - Review & Confirm Committee Support and Agreement for all TPP's prepared to date**

All TPP's were reviewed in detail. Only those changes of substance are listed below. Numerous typographical errors and minor changes were identified. Bob Wilson marked up a Master Copy of Appendix B of the Concept Paper with all the changes.

It was recommended that a standard format of reference to FAR's and JAR's be adopted, following the example:

"Applicable FAR: FAR 36, Appendix G, G36.201(d)(1)"

"Applicable JAR: JAR 36, 5th Draft, September 1995, Section 1, Appendix 3, 5.2.2

Use of the words "para or section" before the final reference should be dropped throughout.

eg. .... Appendix F, G36.201(d)(1) not .....Appendix F, para G36.201(d)(1)

It was also recommended that wherever "Mach Number" is referred to it should be spelt with a capital M and N.

**TPP-003:** Add note to cover sheet that approval was given to the recommendation of this TPP at the ICAO Working Group, Bonn Meeting in June 1995 and will be proposed for adoption into Annex 16 at CAEP3 in Montreal in December 1995.

**TPP-006:** Paragraph one of 2.0 says "See Reference 1 and 2". Only Reference 1 is listed. Peter Kearsey offered to look up the document reference of the ICAO work to be listed as Reference 2.

Several changes to the text to clarify and/or strengthen the case were proposed. These are listed on the "Master Copy" marked up at the meeting.

**TPP-008:** A proposal was made that this TPP be put on hold pending the outcome of CAEP3 when proposals which could impact on this subject will be tabled by ATISG. An appropriate note to this effect should be added to Section 2 of the Concept Paper. Action on Bob Wilson to discuss with Rob Howes and agree wording.

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**Agenda Item 5 - (cont.d)**

**TPP-009:** This paper was accepted in principle but it was felt that the "Discussion" Section, Section 3 needed expanding to clarify the power setting concerns.

The point was made that if this paper could be amended quickly, it was still possible to get in on the Agenda for CAEP3. The best route would be via ICCAIA. Bob Wilson to discuss with Rob Howes the possibility of getting the paper amended quickly and whether to ask Mike Smith of ICCAIA to raise it at CAEP3. (An alternative ICCAIA approach could be via GAMA).

**TPP-010:** It was proposed that under "Applicable JAR", only the JAR 36 reference is needed and that the actual requirement should not be listed. This would be consistent with all other TPP's.

Under recommendation the words of JAR 36 should be used except for the differences between imperial and metric units.

The paper is "light" on data. Rob Howes has an Action (Action 27 from the Wichita Meeting) to provide more experimental data. This should be added to TPP-010.

**TPP-011:** It was proposed that this TPP be cancelled. It was pointed out at the meeting that there is a definition of "slow" and "fast" in JAR 36. Although the wording is different to that of FAR 36 it implies the same definition and therefore no harmonization is required. Bob Wilson to discuss with Rob Howes.

The JAR 36 (and equivalent ICAO Annex 16) references are:

JAR 36, Section 1, Appendix 3, 3 Noise Unit Definitions

JAR 36, Section 1, Appendix 3, 4.3 Sensing, Recording & Reproducing Equipment

ICAO Annex 16, Appendix 6, 3 and 4.3

A repercussion of cancelling TPP-011 is that Item 16 of Annex A and Table 1 of the Concept Paper also need deleting and the reference to TPP-011 and Item 16 deleted in Para 2.13.



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**Agenda Item 5 - (cont.d)**

**TPP-012:** This needs amending to remove reference to Item 7 which TPP-012 says is covered by TPP-007. This is not the case, TPP-007 only addresses Items 4 and 5.

It is proposed that Item 7 be addressed by a new TPP, TPP-013. (It is believed harmonization is not required but this must be investigated to confirm. If harmonization is judged not to be necessary, then the words added as Section 2.4A will need to be added to the Concept Paper. (A proper section number with a re-shuffling of section numbers will be required.)

**Action: Bob Wilson & Rob Howes**

On the assumption that the above changes (and the typographical corrections and minor errors marked up on the Master Copy at the meeting) are embodied, all committee members present approved the TPP's.

**Agenda Item 5A - Review Actions of Wichita Meeting**

The Action Items of the Wichita Meeting were reviewed. A few minor typographical errors were identified. Bob Wilson "marked up" a master copy for correction and inclusion in the next issue of the Concept Paper.

**Action: Bob Wilson/Rob Howes**

A summary of the status of the Action Items is:

<b>Action Item</b>	<b>Responsible</b>	<b>Status</b>
27	Rob Howes	In work
28	John Bertholacci	TPP-010 issued. Action complete
29	Bob Wilson	Action complete
30	Ron Hund	TPP-007 issued. Action complete
31	Rob Howes	TPP-001 issued. Action complete
32	Bob Wilson	In work
33	Mehmet Marsan	Outstanding
34	Rob Howes	In work
35	Ron Hund	TPP-011 - under review
36	Carlos Latoni	TPP-009 issued but needs revising
37	Rob Howes & Bob Wilson	TPP-006 issued. Action complete
38	Alain Depitre	Information issued. Action complete
39	Mehmet Marsan	In work. (Electronic copy of hand-book made available to Bob Wilson)

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**Agenda Item 5A - cont.d**

<b>Action Item</b>	<b>Responsible</b>	<b>Status</b>
40	Rob Howes & Bob Wilson	Action on-going. (Initiated)
41	Alain Depitre & Rick Bowerman	Ongoing
42	Rob Howes & Bob Wilson	Action complete
43	Bob Wilson	Action complete
44	All	Action complete

**Agenda Item 6 - Review Status of Harmonization Issues Requiring Change to ICAO Annex 16**

Following a review of harmonization issues requiring a change to ICAO Annex 16, a summary situation was agreed. With reference to Table 1 of the Concept Paper.

**Item 2, Weight Limit and Item 6, Meteorological Data:** Recommendation for change, to align with FAR 36 will be submitted to ICAO CAEP3 at Montreal in December 1995.

**Item 13 Power Variance;** The JAA representatives suggested that this item be put on hold pending the outcome of CAEP3 when proposals will be tabled by the ATISG which may have an effect on this issue. Action on P Kearsey to advise on the situation post CAEP3.

**Item 14, Power Definition:** It was felt by the meeting that the "Discussion" section of TPP-009 needed expanding to clarify the reasoning. If this could be completed before the start of CAEP3 it should be possible to get a recommendation for change tabled at CAEP3, by ICCAIA.

**Action:** R Wilson to discuss updating TPP-009 with R Howes and C Latoni

**Item 16, Sound Level Meter Settings.** See comments on TPP-011 above. Not a harmonization issue.

**Agenda Item 7 - Working Sessions to Agree Format & Content of Advisory Material**

R Wilson to draw up proposal based on the FAA Handbook.

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**Agenda Item 8 - Agree programme to review appropriate parts of FAR 36 & JAR 36 to cross check all harmonization issues have been identified**

It was the opinion of the meeting that all harmonization issues within the scope of the Group, had been covered. The outstanding item is the advisory material. (Action down to Bob Wilson) A concern raised, was how to ensure any future changes to either code, could be controlled to ensure on going harmonization. It was agreed that R Wilson and R Howes would discuss this with ARAC and the JAR 36 Study Group.

**Agenda Item 9 - Review and agree committees work task timetable/programme &  
Agenda Item 10 - Agree next (final?) meeting**

It was agreed that the majority of the Group's work was complete. Outstanding tasks fell mainly to the Co-Chairs.

A Revised completion timetable needed to be agreed in discussion with ARAC/FAA.

**Action: Bob Wilson/Rob Howes**

A provisional date for a final meeting (if required) was set for 19-20 March 1996

**FAR/JAR Harmonization Working Group  
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**Attachment 1: List of Attendees**

Bob Wilson	Pilatus Britten-Norman Ltd
Peter Kearsey	CAA/JAA UK
Barry Mellers	Slingsby Aviation Ltd
Rick Bowerman	Hartzell Propeller
Frank Weiblen	MT Propeller
Dieter Pade	AOPA-Germany
Willem Franken	RLD The Netherlands/JAA
Alain Depitre	DGAC/JAA

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**Attachment 2: Agenda for Light Propeller-Driven Aircraft, Harmonization  
Working Group Meeting, 14th & 15th November 1995, Frankfurt,  
Germany**

1. Apologies for absence
2. Review and approve minutes of Wichita meeting
3. Confirm position of Industry Committee Members: Do they have authority to speak for their respective companies or only as individuals (written confirmation on Company headed note paper is required.)
- \* 4. Review and agree the concept paper prepared by Rob Howes and Bob Wilson, and presented to ARAC in October 1995.
5. Review and confirm committee support and agreement for all TPP's prepared to date.
- 5A Review actions of Wichita Meeting.
6. Review status of harmonization issues requiring a change to ICAO Annex 16.
7. Working sessions to agree format and content of advisory material.
8. Agree programme to review appropriate parts of FAR 36 and JAR 36 to cross check all harmonization issues have been identified.
9. Review and agree committees work task timetable/programme.
10. Agree next (final?) meeting.
- \* Note: Prior to the meeting a copy of the concept paper was circulated to all committee members. This included a complete set of TPP's (and previous meeting minutes).

**FAR/JAR Harmonization Working Group  
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Frankfurt, Germany**

**Attachment 3: Draft 3 of Concept Paper**

**Draft 3 of Concept Paper is still in work and will be despatched in due course**

**FAR/JAR Harmonization Working Group  
Propeller Driven Small Airplanes**

**14 - 15 November 1995  
Frankfurt, Germany**

**Attachment 4: Action List**

A summary of the outstanding actions from the Wichita Meeting and the new actions arising from the Frankfurt meeting is listed below. Those Action Items from the Wichita Meeting that have been completed are not listed hence the gaps in the numbering.

**Outstanding Actions from the Wichita Meeting**

- 27      Measure and prepare an experimental data set showing the variation of helical tip mach number vs dB(A). Co-ordinate with selected industry experts and attempt to define an analytical version of the measured data. Have data ready for presentation at the Frankfurt Meeting in September '95. Supersedes AI No. 18. **Action - Rob Howes**
  
- 32      Prepare a section for the committee's interpretative document outlining an interpretation of the requirements regarding temperature inversions from JAA. **Action - Bob Wilson**
  
- 33      Check with FAA in Washington to see if it makes any sense to exclude aerobatic aircraft from Appendix G requirements and possibly pick them up somewhere else. **Action - Mehmet Marsan**
  
- 34      Prepare a section for the committee's interpretative document outlining how altitude measurement and flight path verification are done using a camera. **Action - Rob Howes**
  
- 35      Prepare LDPA-TPP-011, SLM settings, to outline new wording for the JAR's that will specifically call out the SLM settings. **Action - Ron Hund**
  
- 36      Prepare LDPA-TPP-009, Power Definitions, so that power settings that are admissible are clearly defined in both sets of regulations. **Action - Carlos Latoni**
  
- 39      Add some clarification to the Appendix G Handbook, 14 CFR Part 36, to spell out where reference conditions are measured, eg. On the ground or at altitude. Make the revised wording available to Bob Wilson. Make an electronic copy of handbook available. **Action - Mehmet Marsan**
  
- 40      Contact GAMA and discuss whether any involvement in the International Co-ordinating Council of Aerospace Industries Association (ICCAIA) to promote the interests of General Aviation would be appropriate. **Action - Bob Wilson/Rob Howes**